

(Northwest Atlantic)

(TUNAS AND BONITOS)

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of tuna fisheries seems likely since there are still many areas that are relatively unexploited, as for example, the western side of both the North and South Atlantic.

There are five species of tuna (bluefin, yellowfin, bigeye, albacore and blackfin) and three species of bonito (skipjack, common bonito and false albacore) in the Northwest Atlantic. They are all similar in appearance especially when they are small and hence are quite difficult to distinguish. However, without accurate identification of the fish, information on the fishery is almost meaningless and hence this Circular has been prepared to assist in identification and to provide some information on the distribution of each species.

All adult tunas and bonitos are large, beautifully streamlined fish admirably adapted to slip easily through the water. The bullet-shaped head, closely-fitting jaws and smooth eyes set flush with the surface suggest that they are capable of great bursts of speed. Even the fins fit into grooves or depressions in the body so as not to interrupt the contour. The tail is crescent-shaped and there are small fins (finlets) between it and the second dorsal and anal fins.

The colour and weight of tunas and bonitos vary with area and season. Other characters used

A NEW Canadian fishery got under way in 1963 when two enterprising fishermen from Campbellton, New Brunswick, began to fish the offshore stocks of tuna and bonito in the Northwest Atlantic. These fishermen had two purse seiners built during the year and in spite of a late start (August 20) caught 366 tons of bluefin and skipjack before the season ended.

Tunas and bonitos are among the greatest of the world's fishery resources but fisheries for them are still in the development stage. This is especially so for the Atlantic where large-scale tuna fisheries were practically non-existent before 1950. By 1960, however, the catch of tunas and bonitos in the Atlantic amounted to 400 million lb or nearly 20 per cent of the world catch. Continued expansion

for identification such as eye size, body proportions, length and position of fins, vary with the size and age of fish. Identification of young tunas is extremely difficult and practically impossible outside of a laboratory because external distinguishing characters do not appear until late in life. Identification of adults often depends on a combination of characters rather than on any single character. For example, adult yellowfin have more yellow colouring than any other species but all tunas have some yellow on their fins.

The following descriptions and drawings will aid in the identification of the various species of tuna and bonito that are likely to be caught in quantity in the Northwest Atlantic. However, if difficulties are still encountered and especially if juveniles are caught, the staff of the Fisheries Research Board of Canada Biological Station at St. Andrews, N.B., will gladly assist in the identification.

BLUEFIN (*Thunnus thynnus*)

Other common names: Bluefin tuna, tuna, tunny, horse mackerel, great albacore.

Description (see Figure 1)

Size. Largest of all tunas; reaches 14 feet (2000 lb); most common sizes off the Maritimes are "giants" (400-600 lb) in early summer and "jumpers" (50-100 lb) in late summer and autumn.

Colour. Back, dark metallic blue with greenish sheen; sides greyish, belly silvery white; finlets yellow with dark edges.

Distinguishing features. Robust body, completely covered with scales; hind edge of first dorsal fin slightly concave; second dorsal deeply concave and sharply pointed; short pectoral fin extends backward only to near hind part of first dorsal; pectoral fin shorter than in other tunas; round vent separates bluefin from yellowfin and bigeye in which vents are oval.

Distribution. Apparently migrates north in spring from West Indies; most common in warmer waters; found in Newfoundland, southern Gulf of St. Lawrence, outer coast of Nova Scotia, Bay of Fundy and southward from June to mid October; areas of concentration vary unpredictably from year to year; "giants" frequently angled in southwestern Nova Scotia and in Newfoundland; "giants" and "jumpers" taken in traps in St. Margaret's Bay, N.S.

YELLOWFIN (*Thunnus albacares*)

Other common names: Yellowfin tuna, Allison's tunny, autumn albacore.

Description (see Figure 2)

Size. A large tuna; in Northwest Atlantic reaches 6 feet (300 lb); up to 8 feet (450 lb) in other areas.

Colour. The most colourful of all tunas with a golden band along sides; fins brilliant yellow, especially second dorsal and anal; finlets bright yellow with narrow dusky edges; young fish have whitish vertical bars or rows of white spots along the sides; colours fade soon after death and yellow disappears.

Distinguishing features. The most delicately proportioned of all tunas with short head, small girth and long tail region; completely covered with scales; extraordinary elongation of second dorsal and anal fins in fish more than 3 feet long distinguishes yellowfin from all tunas; in 5-foot fish these fins may be half as long as body or longer; pectoral fins longer than in bluefin but shorter than in bigeye and albacore; vent oval or tear-shaped.

Distribution. Distributed around the world in waters above 65°F (warmer than for bluefin, bigeye or albacore); common in Gulf Stream, North Equatorial current, western Sargasso Sea, Caribbean and southern Gulf of Mexico; in late spring yellowfin advances into Northwest Atlantic and occurs there (offshore) from June until early October.

BIGEYE (*Thunnus obesus*)

Other common names: None.

Description (see Figure 3)

Size. Smaller than bluefin; reaches 6 feet (400 lb).

Colour. Back, dark ash blue; sides and belly dull greyish blue; tail and pectoral fins reddish black; first dorsal fin has tinge of yellow; finlets yellow with black edges as in bluefin.

Distinguishing features. Robust body completely covered with small scales; shaped like bluefin, but weight and depth carried nearly as far back as second dorsal fin; dorsal fins similar in size and shape to bluefin but pectoral fins longer and more pointed; eye larger than in bluefin; vent oval as in yellowfin.

Distribution. A deep-swimming tuna found chiefly in waters beyond the continental shelves; common in the Caribbean Sea from Venezuela to Florida; a few trolled at the surface off Maryland; some taken off the Nova Scotia coast in 1963 by swordfish longliners.

ALBACORE (*Thunnus alalunga*)

Other common names: Long-finned tuna.

Description (see Figure 4)

Size. A small fish, reaching 75-80 lb (3½ ft) but generally less than 50 lb; fish in eastern parts of North Atlantic smaller than those in the west.

Colour. Sides and belly have a dull brownish cast and a narrow, bluish band lengthwise along the

Bluefin

Thunnus thynnus

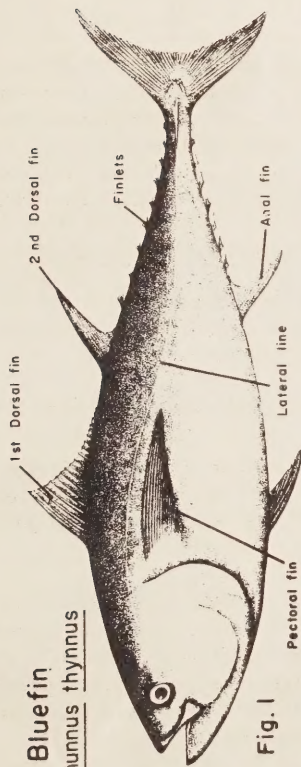


Fig. 1

Yellowfin

Thunnus albacares



Fig. 2

Bigeye

Thunnus obesus



Fig. 3

Albacore

Thunnus alalunga

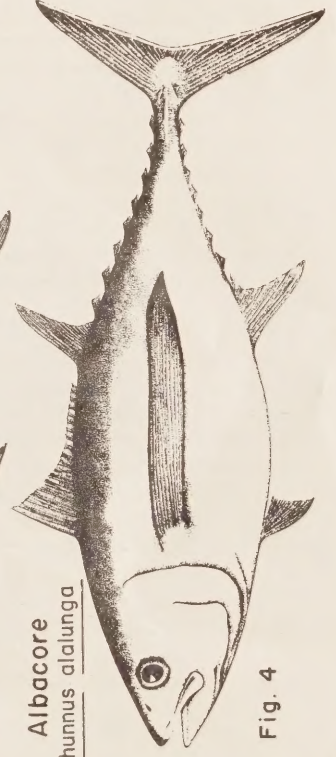


Fig. 4

Blackfin

Thunnus atlanticus

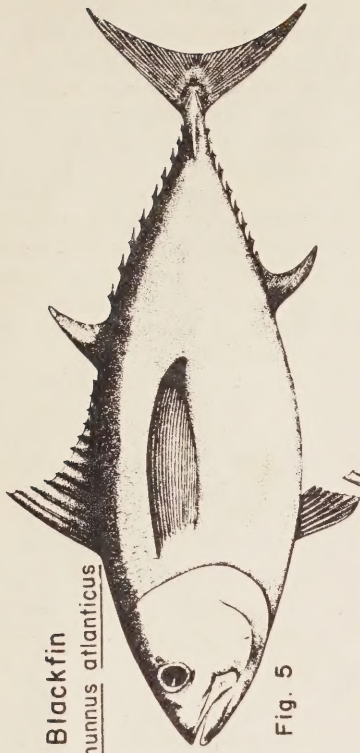


Fig. 5

Skipjack

Euthynnus pelamis

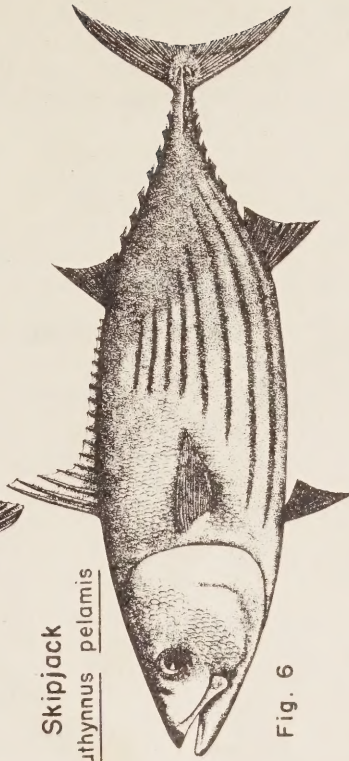


Fig. 6

Common Bonito

Sarda Sarda



Fig. 7

False Albacore

Euthynnus alleteratus

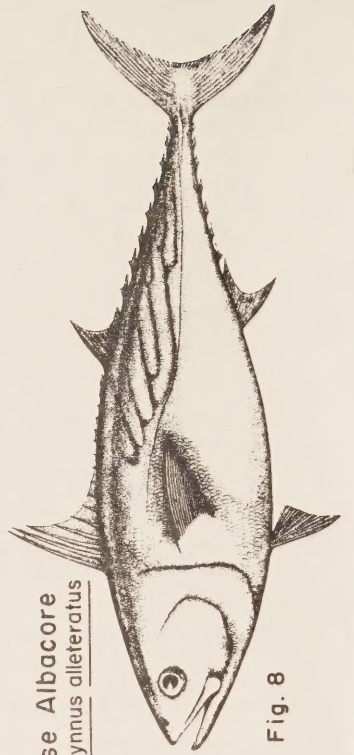


Fig. 8

side; finlets generally darker than in bluefin or bigeye but with some yellow, especially the dorsal finlets; tail fin distinctly edged with white along rear margin.

Distinguishing features. A robust fish completely covered with scales; body weight carried even farther back than in bigeye, tapering abruptly beyond second dorsal fin; great elongation of pectoral fin, reaching well beyond rear margin of second dorsal, distinguishes albacore from all other tunas; dorsal and anal fins similar in size and shape to bluefin and bigeye; vent round.

Distribution. Found in all tropical and temperate seas; tolerant of low temperatures, sometimes found in waters less than 60°F; adults occur around West Indies, Bahamas and Bermuda in late winter and spring, and as far north as Nova Scotia banks in summer; a thinly distributed, deep-swimming resident of oceanic waters caught almost exclusively by longlines.

BLACKFIN (*Thunnus atlanticus*)

Other common names: Bermuda tuna, bigeye tuna, Atlantic blackfin tuna, blackfin bonito.

Description (see Figure 5)

Size. Smallest of all tunas; reaches 3 feet (35 lb).

Colour. Bright golden band along sides; belly white sometimes with small iridescent patches; dorsal finlets dusky bronze; ventral finlets steely grey; lack of yellow on finlets of live fish usually distinguishes the blackfin; golden bands fade at death but a yellowish cast may then appear on finlets.

Distinguishing features. Body very thickset; scales over whole body and large scales form a corselet in pectoral region; eyes large; dorsal and anal fins normal size but pectoral fin longer than in bluefin and extends backwards to the front of second dorsal.

Distribution. Rare north of Cape Hatteras and Bermuda; most northerly record is Lat. 40°04'N; most common in water shoaler than 100 fathoms and warmer than 68°F; caught mainly by sport fishermen in Caribbean, Gulf of Mexico and off Florida coast; range expands somewhat in summer.

SKIPJACK (*Euthynnus pelamis*)

Other common names: Skipjack tuna, ocean bonito, striped bonito.

Description (see Figure 6)

Size. A medium-size fish; reaches 3½ feet (50 lb); most common commercial size 2 feet (10 lb).

Colour. Back steel blue; sides and belly white; lower sides have dark, bluish-brown lengthwise

stripes from pectoral fin to tail.

Distinguishing features. Body weight carried both farther forward and farther back than in any of the true tunas; no scales except for narrow band along lateral line and in corselet around pectoral region; first dorsal fin sickle-shaped along its trailing edge; lateral line curved sharply downward opposite space between dorsal fins.

Distribution. Abundant in most warm and temperate oceans; taken in purse seines as far north as Long Island, New York; occasionally around Cape Cod; rare farther north.

COMMON BONITO (*Sarda sarda*)

Other common names: Atlantic bonito, skipjack, horse mackerel.

Description (see Figure 7)

Size. A small species; reaches 3 feet (10-12 lb).

Colour. Back blue-black; upper sides with dark bluish stripes sloping backward and upward; lower sides and belly silvery; young fish have dark-blue vertical stripes on sides.

Distinguishing features. Body more slender and mackerel-like than in skipjack; completely covered with scales; mouth large, extending back to rear of eye; trailing edge of first dorsal fin almost straight, not sickle-shaped as in skipjack.

Distribution. Found in all warm and temperate oceans; found in western Atlantic from Argentina to southern Gulf of St. Lawrence; taken by sports fishermen and occasionally in trap-nets in Cape Cod area; usually travels in schools, but nowhere abundant enough to support a regular fishery.

FALSE ALBACORE (*Euthynnus alleteratus*)

Other common names: Little tuna, bonito.

Description (see Figure 8)

Size. A medium-size fish; reaches 3 feet (30 lb).

Colour. Back steel-blue; dark wavy horizontal streaks along sides above lateral line; lower sides and belly white except for a few dark spots just behind head.

Distinguishing features. Shape resembles skipjack; body without scales except for a corselet in pectoral region and a band along lateral line; lateral line almost straight; hind edge of first dorsal fin sickle-shaped; mouth larger than in skipjack and extends back to about middle of eye.

Distribution. Widely distributed in tropical and temperate oceans; travels in schools; occasionally taken in traps around Cape Cod.